

Hard-core.—Results recorded last year have been confirmed. Chloropicrin reduces to almost negligible amount the occurrence of hard-core.

Plant Nutrition Investigation.—During the past year main attention has been given to the chemical composition of apple leaves and fruits grown under different fertilizer programmes, the cause of chlorosis of Delicious apple trees, chemical methods for the estimation of zinc, and the iron and manganese status of Nelson tomato leaves.

RESEARCH WORK AT AGRICULTURAL COLLEGES

Grants were made by the Department during the year to Canterbury and Massey Agricultural Colleges for a number of projects which are reported below.

CANTERBURY AGRICULTURAL COLLEGE

MICROBIOLOGY

Crop Diseases.—The fungus responsible for an increasingly prevalent foliage disease of field and garden peas has been isolated and studied.

In the third season of field sowings of disinfected Massey peas, germination improvement over controls was demonstrated only when soil conditions were wet following sowing date. Used crankcase oil, Spergon, Tetroc, and copper-carbonate - Cuprox treatments improved germination.

The percentage infection of standard wheat varieties with eyespot disease when grown on infected plots has been recorded. Cross 7 was most susceptible (91 per cent. infection) and Tuscan least (75 per cent. infection). Other results were similar to those recorded last year.

Over 200 commercially dry dusted samples of wheat have been examined. Over 40 per cent. of the lines carried less than 1 oz. of dust per bushel (sellers guarantee 2 oz. dust per bushel). The dusting machinery has been found to be faulty.

One hundred and ninety farmers' samples of 1947 harvest grain from throughout the wheatgrowing area were examined for covered smut. One hundred and fifty-six revealed no smut present.

Studies were continued on rye-grass blind-seed and the usual disease survey was undertaken.

Soil Microbiology.—*Actinomyces* species of soil origin have been studied and techniques for studying *Azotobacter* are being developed.

Bacteriology.—Bacteriological examinations were made of samples from 6,000 gallons (115 herds) of milk for town supply.

WOOL RESEARCH

The following projects have been continued: wool survey, early shearing, progeny tests, and manufacturing trials. Data is being steadily accumulated in most cases.

Information on the incidence of mycotic dermatitis in one flock in different seasons is being collected. There is evidence that the disease frequency sets up conditions conducive to fly strike.

VETERINARY WORK

Much work has been undertaken on a special kind of lameness following dipping in Rotenone-bearing powders and Gammexane dips. A report will be published shortly in the *Australian Veterinary Journal*.